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IN THE

Supreme Court of the United States

OCTOBER TERM, 2006

COMMONWEALTH OF MASSACHUSETTS, *et al.*,
Petitioners,

v.

ENVIRONMENTAL PROTECTION AGENCY, *et al.*,
Respondents.

On Writ of Certiorari to the United States Court of Appeals For the District of Columbia Circuit

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BRIEF OF THE NATIONAL COUNCIL OF THE CHURCHES OF CHRIST IN THE U.S.A., CHURCH WORLD SERVICE, AND NATIONAL CATHOLIC RURAL LIFE CONFERENCE AS AMICI CURIAE IN SUPPORT OF PETITIONERS

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Amici Curiae submit this brief with the written consent of all parties filed with the Clerk of the Court.[1]

INTEREST OF AMICI CURIAE

Amicus NATIONAL COUNCIL OF THE CHURCHES OF CHRIST IN THE U.S.A. is the principal ecumenical organization in the United States with 35 Protestant, Orthodox, and Anglican member denominations with a com-

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[1] Mr. George LaPlante provided a monetary contribution toward the preparation of this brief.

bined membership of more than fifty million Christians in nearly 140,000 congregations nationwide. Through the National Council, member denominations join in a common witness through ministries of faith, education, public witness, and justice. While the National Council does not purport to speak for all members of its constituent denominations, it does speak for its policy-making body, the General Assembly, whose 350 members are selected by those denominations.

In 1988, concern about the impact of fossil fuel combustion on global climate prompted the National Council and other religious groups to convene in Washington, D.C. to begin to address climate change. Since then, the National Council and other faith groups have considered the moral issues presented by climate change through the lens of long-standing social teaching and have adopted numerous policy statements calling for an immediate response to this serious threat.

Founded in 1946, Amicus CHURCH WORLD SERVICE (CWS) is an ecumenical relief, development, and refugee assistance ministry of 35 Protestant, Orthodox, and Anglican denominations. Working in partnership with indigenous organizations in some 80 countries, CWS supports sustainable self-help development, meets emergency needs, aids refugees, and helps address the root causes of poverty and powerlessness. CWS has responded to many disasters — hurricanes, floods, droughts, and wildfires — that are exacerbated by climate change.

Since its founding in 1923, Amicus NATIONAL CATHOLIC RURAL LIFE CONFERENCE (NCRLC) has served as a prophetic voice for rural communities and for care of the land on which they depend. NCRLC believes that globalization and global environmental issues, including climate change, place even greater demands on NCRLC to fulfill its mission of supporting and empowering rural people. Therefore, NCRLC advocates for policies that will protect God's creation and God's children from

the threat posed by climate change, which is already affecting the farmers and rural communities with which NCRLC works.

As described further below, consistent with their spiritual, ethical, and material interests, Amici and their member religious organizations support immediate action to stem the emissions that contribute to climate change. Apart from their moral commitment to ameliorating needless human suffering, Amici's direct and indirect participation in humanitarian relief efforts gives them a tangible institutional interest in mitigating climate change.

SUMMARY OF ARGUMENT

As a source of potentially grievous harm, anthropogenic climate change stands out in the long history of humanity's affronts to our fellow humans and to our environment. A warming climate will cause or aggravate a host of "natural" disasters, such as hurricanes, droughts, floods, disease epidemics, and wildfires. These disasters have serious consequences for much of humanity, but they threaten most acutely the powerless segments of society: the poor, the sick, the landless and homeless. Indeed, the record-setting 2005 hurricane season that produced the tragedies of Katrina and Rita foreshadows a future of unabated climate change.

Because of this threat, and based on the Christian tenets of stewardship for the natural world and solicitude for the most vulnerable members of the human community, Amici have joined a growing number of people of faith to support concerted action to control emissions of greenhouse gases such as carbon dioxide. As a group, motor vehicles comprise one of the primary sources of those gases in the United States.[2] Section 202(a)(1) of the Clean

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[2] *See* EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2004* fig.ES-16, 3-3 tbl.3-3, 3-8 tbl.3-7 (2006), *available at* <http://yosemite.epa.gov/oar/globalwarming.nsf/

Air Act gives Respondent United States Environmental Protection Agency (EPA) authority to regulate those emissions.

In the decision challenged here, EPA refused to adopt such regulation. In doing so, it bypassed the inquiry prescribed by Congress in section 202(a)(1), *viz.*, whether motor vehicle emissions of greenhouse gases contribute to pollution that "may reasonably be anticipated to endanger public health or welfare."[3] In fact, the disasters characteristic of an anthropogenically warmed climate threaten the survival and well-being — and thus the "health" and "welfare" — of millions of people in the United States and abroad.

EPA ignored these and other potentially serious hazards of climate change. Instead, its decision asserts, in addition to a passel of irrelevant considerations, that climate change involves too much scientific uncertainty. But uncertainty alone cannot justify inaction. To decide rationally whether climate change may "endanger public health or welfare," EPA must consider the harm that would result if the risk of climate change, however uncertain, is realized. EPA failed to do so and thus misapplied section 202(a)(1).

ARGUMENT

I. BASED ON THE TENETS OF THEIR SPIRITUAL TRADITION, AMICI CONTEND THAT WE MUST ACT NOW TO COMBAT CLIMATE CHANGE.

Recognizing that anthropogenic climate change is already having adverse impacts on both humanity and the natural world, Amici submit that it is our responsibility to take action to mitigate our contributions to the changing

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UniqueKeyLookup/RAMR6MBSC3/$File/06_Complete_Report.pdf>.

[3] 42 U.S.C. § 7521(a)(1).

climate. Followers of the Judeo-Christian tradition are called to be responsible, just stewards of the Earth and the abundant resources that it makes available, today and for future generations.[4] Amici therefore contend that we must reduce our substantial contributions to climate change to protect the world entrusted to us.

The specter of climate change extends beyond the natural resources, species, and ecosystems for which we are asked to be stewards. As described in Part II, unchecked climate change promises widespread dislocation and suffering for humanity, particularly for those who already struggle for their survival. Christian ethics preaches love of our fellow humans as ourselves,[5] and more particularly, care and compassion for those who are the most vulnerable and needy.[6] These principles provide an independent justification for Amici's call for immediate action to limit our contributions to climate change and its attendant human tragedies.

Though the problem of climate change is plainly global in both cause and effect, we in the United States bear a special responsibility. As our affluence makes the United States the greatest contributor to the problem of climate change,[7] so too must we be the greatest contributor to the solution.[8]

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[4] *See Genesis* 2:15, 9:12.

[5] *See Matthew* 22:39; *Mark* 12:31-33.

[6] *See, e.g., Matthew* 19:21, 25:34-40; *Luke* 14:13-14.

[7] *See* U.N. Framework Convention on Climate Change, Subsidiary Body for Implementation, *Report on National Greenhouse Gas Inventory Data from Parties Included in Annex I to the Convention for the Period 1990–2003*, 14 tbl.4, U.N. Doc. FCCC/SBI/2005/17 (Oct. 12, 2005), *available at* <http://unfccc.int/resource/docs/2005/sbi/eng/17.pdf>; U.N. Framework Convention on Climate Change, Subsidiary Body for Implementation, *Sixth Compilation and Synthesis of Initial National Communications from Parties Not Included in Annex I to the Convention, Inventories of Anthropogenic Emissions by*

Amici therefore have joined the many members of the religious community who have expressed grave concern about unmitigated climate change. In May 2001, Amici joined 41 heads of major denominations and other senior religious leaders in issuing a collective statement that climate change threatens "the future of God's creation on earth; the nature and durability of our economy; our public health and public lands; the environment and quality of life we bequeath our children and grandchildren. We are being called to consider national purpose, not just policy."[9] Likewise, in a November 2002 statement (reiterated in 21 state-level statements in 2003, 2004, and 2005), Amici and senior religious leaders from a diverse array of Christian and Jewish denominations and groups stated,

> We are deeply distressed by evidence that . . . [g]lobal greenhouse gas emissions are projected to increase average temperatures by 2.5 to 10.4 degrees Fahrenheit into the next century — bringing rising seas, weather and agricultural disruptions, floods, refugees, migrating diseases and other dislocations which most harm the planet's poor and vulnerable. The United States contributes 25% of these world emissions.[10]

Sources and Removals by Sinks of Greenhouse Gases, 7-8 tbl.1, U.N. Doc. FCCC/SBI/2005/18/Add.2 (Oct. 25, 2005), *available at* <http://unfccc.int/resource/docs/2005/sbi/eng/18a02.pdf>.

[8] *See Luke* 12:48.

[9] *Let There Be Light: Energy Conservation and God's Creation* (2001), *available at* <http://www.protectingcreation.org/documents/LetThereBeLight.html>.

[10] Interfaith Climate and Energy Campaign, *An Open Letter to U.S. Automobile Companies* (2002), *available at* <http://www.coejl.org/action/FinalOpenLetter11_18_02.pdf>.

Many other Christian groups and leaders have expressed similar concerns in urging action to mitigate climate change.[11]

Amici believe that time is of the essence in responding to climate change. Section 202(a)(1) of the Clean Air Act gives EPA the authority to control emissions from motor vehicles, one of the most significant sources of greenhouse gases. Given the severe consequences of unabated climate change, EPA should have exercised that authority in response to the rulemaking petition.

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[11] *See, e.g.*, H.E. Archbishop Celestino Migliore, Apostolic Nuncio, Permanent Observer of the Holy See to the United Nations, *Statement at the High-level Segment of the 14th Session of the Commission on Sustainable Development of the Economic and Social Council* (May 11, 2006), *available at* <http://www.holyseemission.org/11May2006%20CSD.html>; Conference of Catholic Bishops, *Global Climate Change: A Plea for Dialogue, Prudence, and the Common Good* (2001), *available at* <http://www.usccb.org/sdwp/international/globalclimate.htm>; Evangelical Climate Initiative, *Climate Change: An Evangelical Call to Action* (2006) (subscribed by 86 evangelical Christian leaders), *available at* <http://www.christiansandclimate.org/statement>; 75th General Convention of The Episcopal Church, *Response to Global Warming* (June 2006), *available at* <http://www.ncrlc.com/episcopal_global_warming.html>; United Methodist Church, General Conference 2004, *Concern for Climate Change* (May 3, 2004), *available at* <http://archives.umc.org/Calms/petition.asp?mid=2886&Petition=1027&test=true>; Reformed Church in America, *Climate Change* (1993), *available at* <http://www.nrpe.org/issues/i_air/air_mainline01.htm>; World Council of Churches, *A Spiritual Declaration on Climate Change Made by Faith Community Participants during the United Nations Climate Change Conference (COP11 and COP/MOP1)* (Dec. 4, 2005), *available at* <http://www.wcc-coe.org/wcc/what/jpc/climatechange-cop11.html>.

II. EPA ERRED IN IGNORING THE HAZARDS THAT CLIMATE CHANGE POSES FOR "PUBLIC HEALTH OR WELFARE."

If allowed to proceed apace, climate change will cause and aggravate severe storms, droughts, floods, wildfire, and disease epidemics and thus will precipitate a variety of humanitarian crises. The burdens of these disasters would weigh most heavily on those who already struggle for survival. By multiplying and magnifying disasters, climate change also would interfere with the relief work that Amici and other humanitarian organizations implement and support.

In "declining" to adopt standards under section 202(a)(1) of the Clean Air Act for motor vehicle emissions of greenhouse gases, EPA ignored these hazards. Instead, it based its denial of the rulemaking petition on a variety of irrelevant "policy" considerations and a generic complaint that the science of climate change involves too much uncertainty. As Petitioners demonstrate, it was error for EPA to rely on "policy" factors beyond those enshrined in the statute.[12] Likewise, uncertainty, without more, does not demonstrate that climate change cannot "reasonably be anticipated to endanger public health or welfare."[13] To properly apply this "endangerment" standard, EPA should have considered what peril awaits if the putative uncertainty recedes and reveals climate change to be harmful. An uncertain harm is not the same as no harm at all, and EPA misapplied section 202(a)(1) by treating it as such.

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[12] *See* Brief for the Petitioners at 35-48.

[13] 42 U.S.C. § 7521(a)(1).

A. Climate Change Threatens to Exacerbate Human Suffering, Particularly for the Most Vulnerable.

As more fully described in the amicus brief submitted by eighteen climate scientists, only *de minimis* debate persists in the scientific community about the fact of climate change and the significant contribution that human emissions of greenhouse gases, including motor vehicle emissions, make to that change.[14] Evidence is likewise accumulating to show that climate change is beginning to affect natural and human communities and that those effects are likely to grow worse with continuing unchecked emissions of greenhouse gases.[15] The science paints a sobering picture of a world fundamentally transformed for the worse by a warming climate.

Climate change poses a dramatic threat to a host of species and ecosystems around the world. But a warming climate also gravely threatens human communities and particularly those living closest to the edge of survival, such as the poor, the homeless, and inhabitants of marginal lands. Climate change will also push more of humanity toward that edge. These effects are tragedies in the making, and crucially, tragedies of our own making.

Beyond causing a general increase in average global temperature, climate change will produce more extreme

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[14] *See* Brief of Amici Curiae Climate Scientists David Battisti et al. in Support of Petitioners; *see also, e.g.*, Naomi Oreskes, *The Scientific Consensus on Climate Change*, 306 Science 1686 (2004) (reviewing abstracts for 928 peer-reviewed articles on climate change published in scientific journals between 1993 and 2003 and finding none that disputes the existence of that change or the anthropogenic contribution to it).

[15] *See* Intergovernmental Panel on Climate Change, *Third Assessment Report, Climate Change 2001: Impacts, Adaptation, and Vulnerability* (2001) (hereinafter "IPCC"), *available at* <http://www.grida.no/climate/ipcc_tar/wg2/index.htm>.

weather events.[16] A significant and growing body of evidence suggests that warming oceans have already begun to intensify hurricanes and tropical storms,[17] and indeed, 2005 set numerous records for such storms.[18] Beyond tropical storms, more severe weather also entails an increase in extreme precipitation events and a greater risk of flooding in many parts of the world.[19] Paradoxically, changing weather patterns simultaneously threaten to cause or worsen catastrophic droughts and potentially exacerbate desertification in some regions.[20] Climate models also predict more severe and longer summer heat waves.[21]

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[16] *See* IPCC, *supra* note 15, at 458-60.

[17] *See* James B. Elsner, *Evidence in Support of the Climate Change: Atlantic Hurricane Hypothesis*, 33 Geophysical Research Letters ___ (forthcoming 2006); Thomas R. Knutson & Robert E. Tuleya, *Impact of CO2-Induced Warming on Simulated Hurricane Intensity and Precipitation: Sensitivity to the Choice of Climate Model and Convective Parameterization*, 17 J. Climate 3477 (2004); M.E. Mann & K.A. Emanuel, *Atlantic Hurricane Trends Linked to Climate Change*, 87 Eos 233 (2006); Kevin E. Trenberth & Dennis J. Shea, *Atlantic Hurricanes and Natural Variability in 2005*, 33 Geophysical Research Letters L12704 (2006).

[18] *See* Nat'l Oceanic & Atmospheric Admin., *NOAA Reviews Record-Setting 2005 Atlantic Hurricane Season: Active Hurricane Era Likely to Continue* (updated Apr. 13, 2006), <http://www.noaanews.noaa.gov/stories2005/s2540.htm>.

[19] *See* IPCC, *supra* note 15, at 38, 205-06, 459-60; P.C.D. Milly et al., *Increasing Risk of Great Floods in a Changing Climate*, 415 Nature 514 (2002).

[20] *See* IPCC, *supra* note 15, at 206-07, 460, 519.

[21] *See* Center for Health and the Global Environment, Harvard Medical School, *Climate Change Futures: Health, Ecological and Economic Dimensions* 53-54 (2005), <http://www.climatechangefutures.org/pdf/CCF_Report_Final_10.27.pdf>; IPCC, *supra* note 15, at 397-98, 457-58.

Climate change's effects reach beyond the weather. Warmer spring and summer temperatures are likely to increase the frequency and intensity of wildfires.[22] Further, a warmer climate and changing precipitation patterns will encourage the spread of infectious diseases such as malaria, by both expanding the range in which they currently occur and allowing them to thrive in regions previously inhospitable to them, including parts of the United States.[23]

These manifestations of a warming climate have potentially dire consequences for humanity. Their most devastating consequences, however, are reserved for the poor, the homeless and landless, and inhabitants of marginally productive lands.[24] Those with the most tenuous grasp on survival are least able to adapt to changing circumstances and new risks.[25]

Hurricanes Katrina and Rita powerfully illustrated the destruction and disruption that severe storm activity can cause and their unequal distribution within and among communities. Such storm events can kill, injure, and leave homeless countless victims and can cripple the public infrastructure and institutions that would other-

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[22] *See* Anthony L. Westerling et al., *Warming and Earlier Spring Increases Western U.S. Forest Wildfire Activity*, Sciencexpress, July 6, 2006, at 1; *see also* IPCC, *supra* note 15, at 290.

[23] *See* Andrew K. Githeko et al., *Climate Change and Vector-Borne Diseases: A Regional Analysis*, 78 Bull. World Health Org. 1136, 1141-42 (2000); IPCC, *supra* note 15, at 43, 462-72.

[24] *See* IPCC, *supra* note 15, at 8, 44, 63, 458-59, 935; *see also* Geoff O'Brien et al., *Climate Change and Disaster Management*, 30 Disasters 64, 64 (2006) ("Disasters triggered by natural hazards are killing more and more people over time and costing more. . . . The world's poorer nations are disproportionately affected, and the most vulnerable and marginalised people in these nations bear the brunt.").

[25] *See* IPCC, *supra* note 15, at 895-96, 899.

wise respond to those losses.[26] As the 2005 storms revealed, the poor and powerless often live in the areas most susceptible to storm damage and are least able to flee a coming storm.[27] Moreover, subsequent experience has shown that those unable to flee on their own experience lasting problems.[28]

The other effects of climate change are likely to be similarly profound and unevenly distributed within and among societies. Adverse effects on agricultural productivity, such as those caused by droughts and desertification, will exacerbate hunger and malnutrition, particularly in sub-Saharan Africa where people already struggle to eke out a living from the land.[29] The increased risk of disease similarly will be borne most heavily by the

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[26] *See* Brookings Institution, Metropolitan Policy Program, *New Orleans After the Storm: Lessons from the Past, a Plan for the Future* 13-20 (2005), *available at* <http://www.brookings.edu/metro/pubs/20051012_NewOrleans.pdf> (hereinafter "*New Orleans After the Storm*"); Shaila Dewan et al., *Evacuees' Lives Still Upended Seven Months After Hurricane*, N.Y. Times, (Mar. 22, 2006), at A1; *see also* IPCC, *supra* note 15, at 43 (noting that increased storm severity "can cause direct loss of life and injury and . . . loss of shelter, population displacement, contamination of water supplies, loss of food production (leading to hunger and malnutrition), increased risk of infectious disease epidemics . . ., and damage to infrastructure for provision of health services").

[27] *See New Orleans After the Storm*, *supra* note 26, at 14-20.

[28] *See* Stacey Plaisance, *Those Who Fled Katrina on Own Did Better*, Chi. Trib., Aug. 14, 2006 (describing study finding that "[e]vacuees who escaped Hurricane Katrina's flooding on their own are faring better almost a year later than the thousands rescued and dumped in cities saturated with evacuees").

[29] *See* IPCC, *supra* note 15, at 44, 519-20; Millennium Ecosystem Assessment, *Ecosystems and Human Well-Being: Desertification Synthesis* (2005), <http://www.inweh.unu.edu/inweh/MA/Desertification-Synthesis.pdf>.

poor in developing nations.[30] Sweltering summer heat waves will take their toll principally on the defenseless — the aged, the sick, and the poor — who lack effective access to air conditioning and health care or are most sensitive to the physiological effects of warmer temperatures.[31] Indeed, record-setting summer weather in the past several years has left hundreds dead each year, especially among the elderly.[32]

Beyond the direct effects on life and health, climate change will leave many landless and homeless — the refugees of climate change.[33] In developing nations, disas-

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[30] *See* IPCC, *supra* note 15, at 43 ("In areas with limited or deteriorating public health infrastructure, increased temperatures will tend to expand the geographic range of malaria transmission to higher altitudes . . . and higher latitudes . . . .").

[31] *See id.* at 43, 397; Ctrs. for Disease Control, *Heat Related Deaths—United States, 1999-2003* (July 28, 2006), <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5529a2.htm>.

[32] *See, e.g.*, Ctrs. for Disease Control, *supra* note 31; Amanda Covarrubias, *California Heat Wave Deaths Prompt Health Study*, L.A. Times, Aug. 3, 2006; Susana Conti et al., *Epidemiologic Study of Mortality During the Summer 2003 Heat Wave in Italy*, 98 Envtl. Research 390 (2005).

[33] *See* IPCC, *supra* note 15, at 397; Norman Meyers, *Environmental Refugees: An Emergent Security Issue*, Organization for Security and Cooperation in Europe, 13th Economic Forum, Prague (May 22, 2005), <http://www.osce.org/documents/eea/2005/05/14488_en.pdf> ("When global warming takes hold, there could be as many as 200 million people overtaken by disruptions of monsoon systems and other rainfall regimes, by droughts of unprecedented severity and duration, and by sea-level rise and coastal flooding."); O'Brien et al., *supra* note 24, at 68 ("Climate-displaced persons may suffer complex emergencies and strife as they flee with disregard for clan, tribal, and national boundaries.").

ters can also significantly impede economic development: "The losses caused by Hurricane Mitch to Honduras and Nicaragua in 1998 totalled more than the combined gross domestic product . . . of both countries, setting development back 20 years."[34]

B. Climate Change Also Threatens Amici's Efforts to Care for the Needy, Including Victims of Natural Disasters.

Called to service in the Christian tradition of charity and solicitude for the most needy, Amicus CWS and their members, the members of Amicus National Council, and Catholic groups working with Amicus NCRLC are active participants in disaster and poverty relief efforts around the world, including the recent responses to Hurricanes Katrina and Rita. Climate change threatens this work.

Through their Emergency Response Program, CWS and its partners provide emergency materials — food, medical supplies, blankets, and temporary shelter — to thousands of children, women, and men in times of crisis around the world.[35] For example, last year, CWS helped survivors of tropical hurricanes in Cuba and Mexico secure safe temporary shelter after the onslaught of Hurricanes Dennis and Emily.

CWS's humanitarian work continues long after the initial crises are over. Through their Social and Economic Development Program, Amici provide long-term technical assistance, emergency management training, and spiritual encouragement to help support communities through the recovery process and avert future emergencies.[36]

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[34] O'Brien et al., *supra* note 24, at 69.

[35] *See Church World Service Overview*, <http://www.churchworldservice.org/brochures/cws.html>.

[36] *Id.*; *see also Church World Service Emergency Response Program: International Response*, <http://www.cwserp.org/international.php> (describing CWS's current international emergency response efforts, including responses to floods in

Domestically, CWS and the member denominations of the National Council support the relief efforts of local faith communities as they assist survivors coping with the unimaginable losses that natural disasters cause. In the aftermath of Hurricane Katrina, for example, CWS sent more than 70 shipments of blankets, health kits, school kits, emergency cleanup buckets, kids' kits, baby kits, Interchurch Medical Assistance medicine boxes, and UNICEF recreational kits to help hurricane survivors.[37] A year after the tragedy, the National Council, CWS, and Catholic groups working with NCRLC remain involved in the long-term recovery of the affected communities. They have mentored, trained, and channeled financial support to new community recovery organizations, which will coordinate volunteer and skilled labor for home rebuilding. Amici are committed to support these groups. Moreover, they or their members have distributed millions of dollars in financial assistance to aid Gulf Coast recovery operations, have provided support services to clergy and caregivers in the area, and have replaced computers and other supplies in damaged schools.[38]

Of course, even under existing climatic conditions Amici and all the relief organizations in the world cannot provide needed care for the many victims of natural disasters. Climate change promises to dramatically expand this shortfall. Without immediate action to cut emissions of greenhouse gases, even redoubled efforts by relief groups will be inadequate to the humanitarian relief task. The awesome scale of the impacts of a warmer climate would dwarf any response that such groups could mount, even with a heroic commitment of public and private re-

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Serbia, a mudslide in the Philippines, and mudslides and floods in Indonesia, and relief and food security in Ethiopia).

[37] *See Church World Service Emergency Response Program—Hurricane Katrina Update* (June 19, 2006), <http://www.cwserp.org/reportview.php?entry=503>.

[38] *Id.*

sources to the effort. Moreover, it is likely that the resources available to CWS and other relief groups will not substantially increase with the growing severity of these crises. The resources of Amici and their member groups thus will be increasingly stretched thin, undermining the adequacy of the services that they already provide.

C. EPA Misapplied Section 202(a)(1) By Failing to Consider the Disastrous Consequences of Climate Change.

EPA erred by failing to consider the potential impacts of climate change, including the severe impacts discussed above, before denying the rulemaking petition. Such consideration is essential to a reasoned determination of whether the climate change "endanger[s] public health or welfare."

Motor vehicle emissions contribute to atmospheric concentrations of greenhouse gases, which cause climate change, and which in turn impairs both "public health" and "welfare." "Public health" is undefined in the statute, but the Act appears to use it in its ordinary sense of "the health of the public."[39] As described previously, the disasters that climate change will cause and exacerbate will produce fatalities, injuries, malnutrition, and illness, all of which are impacts to "public health."

The disasters produced by unmitigated climate change would likewise harm "public . . . welfare." The Act defines "[a]ll language referring to effects on welfare" as

> Includ[ing], but . . . not limited to, effects on soils, water, crops, vegetation, manmade materials, animals, wildlife, weather, visibility, and climate, damage to and deterioration of property, and haz-

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[39] Dictionary definitions typically refer to the science or profession of public health, *e.g.*, *Webster's Ninth New Collegiate Dictionary* 952 (1983), but that usage makes little sense when the phrase is juxtaposed with the word "endanger," as in section 202(a)(1).

> ards to transportation, as well as effects on economic values and on personal comfort and well-being, whether caused by transformation, conversion, or combination with other air pollutants.[40]

Disasters would affect "personal comfort and well-being" by leaving people homeless and landless and destroying schools and places of employment and worship. In disrupting economic activity, most severely in developing nations with fragile economies,[41] climate disasters would have "effects *on economic* values." They would destroy and damage "crops," domestic "animals," and other public and private "property." Finally, the economic and logistical burdens that climate change places on relief organizations such as Amicus CWS are cognizable "effects on economic values."

EPA never addressed these consequences of climate change; indeed, it altogether ignored the harm that climate change could cause. Instead, EPA identified several irrelevant policy considerations and recited what it saw as uncertainties in the climate science.[42] As Petitioners describe, however, the policy considerations are not cognizable under the statutory standard, and the bare invocation of uncertainty does not provide a reasoned basis for denying the rulemaking petition.[43] Congress's use of the phrase "may reasonably be anticipated to endanger" in section 202(a)(1) shows that uncertainty *simpliciter* cannot answer the question whether pollution produced by motor vehicle emissions poses a threat to public health or

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[40] 42 U.S.C. § 7602(h).

[41] O'Brien, *supra* note 24, at 69.

[42] *See* Control of Emissions From New Highway Vehicles and Engines, 68 Fed. Reg. 52,922, 52,929-31 (Sept. 8, 2003). In fact, as the climate scientists' brief shows, that uncertainty is more illusion than fact. *See* Brief of Amici Curiae Climate Scientists, *supra* note 14, at 10-17.

[43] *See* Brief for the Petitioners at 35-48.

welfare and thus demands a regulatory response. To the extent that EPA's decision relied on uncertainty, it was obliged to explain why that putative uncertainty demonstrates that climate change cannot "reasonably be anticipated to endanger public health or welfare."[44] It failed to do so.

A reasoned explanation must assess the harm, however uncertain, that uncontrolled climate change could cause. A rational decision about "endangerment" must account for both the likelihood or uncertainty of harm and the magnitude of the potential harm:

> Danger . . . is not set by a fixed probability of harm, but rather is composed of reciprocal elements of risk and harm, or probability and severity. That is to say, the public health may properly be found endangered both by a lesser risk of a greater harm and by a greater risk of a lesser harm.[45]

An uncertain harm is not the same as no harm at all; an uncertain harm might properly be discounted by the uncertainty, but it cannot be ignored.[46] For example, x chance of a one-dollar harm is not the same as x chance of a multi-billion-dollar harm.[47] EPA's decision implies that

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[44] *See Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) (holding that "the agency must examine the relevant data and articulate a satisfactory explanation for its action including a 'rational connection between the facts found and the choice made'").

[45] *Ethyl Corp. v. EPA*, 541 F.2d 1, 18 (D.C. Cir. 1976) (citations omitted).

[46] *See* Cass R. Sunstein, *Risk and Reason: Safety, Law, and the Environment* 103 (2002) ("The fact that a danger is unlikely to materialize is hardly a good objection to regulatory controls.").

[47] Amici do not mean to suggest that EPA must quantify or monetize risks or harm under section 202(a)(1); risk and harm are quantified here only for illustration.

a given degree of scientific uncertainty justifies inaction whether the potential harm is astronomical or infinitesimal. It is conceivable that a risk may be so unlikely that even exceptionally serious harm could be discounted to irrelevance, but one cannot conclude as much without first assessing the severity of the harm. EPA did not do so.

In considering whether *x* chance of *y* harm amounts to endangerment of public health or welfare, it is for EPA, of course, to establish *x* and *y* and to decide in the first instance whether together they amount to "endangerment." But EPA cannot shirk its responsibility to render a decision on each of these points and to explain those decisions. EPA ignored *y* altogether and thus "entirely failed to consider an important aspect of the problem."[48]

EPA erred in disregarding the potentially dangerous effects of motor vehicles' emissions of greenhouse gases and the changes in climate to which they contribute. The impacts of climate change on humanity and the environment described in this brief are exactly the kinds of impacts on public health and welfare that section 202(a)(1) obligates EPA to consider. Simply describing the ostensible uncertainty of those effects, as EPA has done here, does not answer the question that Congress posed in section 202(a)(1) of the Clean Air Act.

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[48] *Motor Vehicle Mfrs.*, 463 U.S. at 43.

CONCLUSION

For the reasons stated herein, Amici respectfully request that this Court reverse the decision of the Court of Appeals.

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